

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-168534

(43)Date of publication of application : 22.06.1999

(51)Int.Cl.

H04M 1/00
G11B 31/00
G11B 33/06
H04B 1/40
H04Q 7/38

(21)Application number : 09-352422

(71)Applicant : ONKYO CORP

(22)Date of filing : 04.12.1997

(72)Inventor : YOSHINO HAJIME

TAKAHASHI EIJI

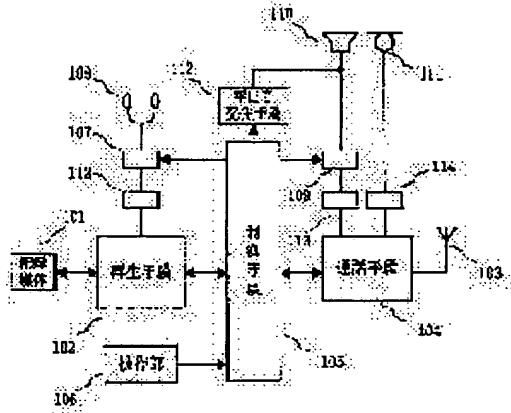
OGAWA MASAKI

(54) RADIO EQUIPMENT WITH RECORDING MEDIUM REPRODUCTION FUNCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To make a speech with a simple operation without the need for troublesome operations even in the case of reception by a mobile telephone set in the midst of using a headphone to listen to a music or the like.

SOLUTION: Upon the receipt of a radio signal by an antenna 103, a speech means 104 informs of a control means 105 of it, and the control means 105 discriminates whether or not an MD is under reproduction. When the MD is reproduced, the control means 105 controls a call tone generating means 112, allows a speaker 110 to sound a call tone for a prescribed number of times and controls a reproduction means 102 so that the reproduction of the MD is set to a tentative stop state. When the possessor depresses a speech start/end key 53 after that, the speech means 104 is set to a speech state.



BEST AVAILABLE COPY

JP, 11-168534, A

Pub Date 1999 06 22

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the radio equipment with a record-medium regenerative function which consists of a pocket mold playback device which performs playback of record media, such as an analog cassette tape, and DAT, CD, MD, using headphone, and migration telephone machines, such as carrying and PHS.

[0002]

[Description of the Prior Art] In recent years, migration telephone machines, such as carrying and PHS, have appeared on the market quickly from the request that he wants to use a telephone from any locations in any times.

[0003] Moreover, similarly, from the request that he wants to listen to music or to perform linguistic study etc., many men are also carrying pocket mold audio equipment, and, recently, many records / regenerative apparatus of MD have appeared on the market not to mention CD in any times or what kind of location in recent years.

[0004] Thus, since many men are carrying a migration telephone machine and pocket mold audio equipment, there are also many people whom both sides use.

[0005]

[Problem(s) to be Solved by the Invention] In the user of such both sides, pocket mold audio equipment was changed into the playback condition, and it has also arisen frequently that the midst it is being heard that music etc. is has reception at a migration telephone machine. In such a case, after a user hears ringing tone, he has to stop playback of audio equipment, has to set a migration telephone machine as a talk state, and is hurried, and actuation is also still more troublesome. If a playback termination is confusedly operated at this time, since accidentally different actuation will be performed, a migration telephone machine cannot be easily made into a talk state, but the situation where a telephone will be cut off may also be produced. Moreover, since playback is continued during the message when a migration telephone machine is made into a talk state, without stopping playback of audio equipment, actuation of returning a playback location is needed after message termination, and it is troublesome.

[0006] Then, this invention consists of these both sides, and even if a migration telephone machine has reception, troublesome actuation is unnecessary to the midst it is being heard that music etc. is, and it aims at offering the user-friendly radio equipment with a record-medium regenerative function whose message can be enabled by easy actuation to it.

[0007]

[Means for Solving the Problem] The radio equipment with a record-medium regenerative function of claim 1 by transmitting and receiving the playback means and radio signal which reproduce a record medium A message means by which the message with the partner of arbitration can be performed, a playback means, the control means that controls a message means, It is radio equipment with a preparation ***** regenerative function, and a playback means enables playback by headphone. A control means If there is reception of a predetermined radio signal at the time of playback of the

record medium by headphone use, while calling a possessor, when playback actuation has a playback means reproduced, it is characterized by making it stop in the condition that it is reproducible from a current record-medium playback location.

[0008] The radio equipment with a record-medium regenerative function of claim 2 by transmitting and receiving the playback means and radio signal which reproduce a record medium A message means by which the message with the partner of arbitration can be performed, a playback means, the control means that controls a message means, It is radio equipment with a preparation ***** regenerative function, and a playback means enables playback by headphone. A control means If there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use If a possessor is called and the message initiation actuation by the control unit is made after that, when playback actuation has a playback means reproduced, it will be characterized by making it stop in the condition that it is reproducible from a current record-medium playback location.

[0009] The radio equipment with a record-medium regenerative function of claim 3 is radio equipment with a record-medium regenerative function according to claim 1 or 2, and is characterized by performing the call to a possessor in the ringing tone by the ringing-tone generating means.

[0010] The radio equipment with a record-medium regenerative function of claim 4 by transmitting and receiving the playback means and radio signal which reproduce a record medium A message means by which the message with the partner of arbitration can be performed, a playback means, the control means that controls a message means, It is radio equipment with a preparation ***** regenerative function, and a playback means enables playback by headphone. A control means If there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use, while generating ringing tone with a ringing-tone generating means When the count of a call of ringing tone is counted and playback actuation has a playback means reproduced after the predetermined count call of a call, it is characterized by making it stop in the condition that it is reproducible from a current record-medium playback location.

[0011] The radio equipment with a record-medium regenerative function of claim 5 is radio equipment with a record-medium regenerative function according to claim 1, 2, 3, or 4, and if a control means is set as message exit status, it will be characterized by controlling a playback means to reproduce a record medium.

[0012] While the radio equipment with a record-medium regenerative function of claim 6 is connected possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal-processing means connected possible [I/O] to a message means, and a signal-processing means, a playback means, a message means, and a signal-processing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced, after calling a possessor It is characterized by controlling a signal-processing means to make it stop, and to set a message means as a talk state, and to supply the output of a message means to the headphone section of headphone with a microphone.

[0013] While the radio equipment with a record-medium regenerative function of claim 7 is connected possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal-processing means connected possible [I/O] to a message means, and a signal-processing means, a playback means, a message means, and a signal-processing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear

the playback data based on a playback means, and can also perform the message by the message means. A control means If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced if a possessor is called and the message initiation actuation by the control unit is made after that It is made to stop and is characterized by controlling a signal-processing means to supply the output of a message means to the headphone section of headphone with a microphone.

[0014] The radio equipment with a record-medium regenerative function of claim 8 is radio equipment with a record-medium regenerative function according to claim 6 or 7, and is characterized by performing the call to a possessor in the ringing tone by the ringing-tone generating means.

[0015] While the radio equipment with a record-medium regenerative function of claim 9 is connected possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal-processing means connected possible [I/O] to a message means, and a signal-processing means, a playback means, a message means, and a signal-processing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when ringing tone is generated with a ringing-tone generating means, the count of a call of ringing tone is counted and playback actuation has a playback means reproduced after the predetermined count call of a call The radio equipment with a record-medium regenerative function of claim 10 characterized by controlling a signal-processing means to make it stop, and to set a message means as a talk state, and to supply the output of a message means to the headphone section of headphone with a microphone It is radio equipment with a record-medium regenerative function according to claim 8 or 9. Further a signal-processing means It connects possible [an input] to the ringing-tone generating means, and a control means is characterized by controlling a signal-processing means to supply the output of a ringing-tone generating means to the headphone section of headphone with a microphone at the time of ringing-tone generating.

[0016] The radio equipment with a record-medium regenerative function of claim 11 is radio equipment with a record-medium regenerative function according to claim 6, 7, 8, 9, or 10, and it is characterized by controlling a signal-processing means to supply the output of a playback means to the headphone section of headphone with a microphone while it will control a playback means to reproduce a record medium, if a control means is set as message exit status.

[0017] The radio equipment with a record-medium regenerative function of claim 12 While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal mixing means connected possible [I/O] to a message means, and a signal mixing means, a playback means, a message means, and a signal mixing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means If there is reception of a predetermined radio signal, a possessor will be called, a signal mixing means will mix the output of a playback means, and the output of a message means by the predetermined ratio, and it will be characterized by being what is supplied to the headphone section of headphone with a microphone.

[0018] The radio equipment with a record-medium regenerative function of claim 13 While connecting possible [an input] to the message means and the playback means which the message with the partner

of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal mixing means connected possible [I/O] to a message means, and a signal mixing means, a playback means, a message means, and a signal mixing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A signal mixing means It is what mixes the output of a playback means, and the output of a message means by the predetermined ratio, and is supplied to the headphone section of headphone with a microphone. A control means If there is reception of a predetermined radio signal at the time of playback of a record medium, after calling a possessor, it will be characterized by setting a message means as a talk state.

[0019] The radio equipment with a record-medium regenerative function of claim 14 is radio equipment with a record-medium regenerative function according to claim 12 or 13, and is characterized by performing the call to a possessor in the ringing tone by the ringing-tone generating means.

[0020] The radio equipment with a record-medium regenerative function of claim 15 While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal mixing means connected possible [I/O] to a message means, and a signal mixing means, a playback means, a message means, and a signal mixing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A signal mixing means It is what mixes the output of a playback means, and the output of a message means by the predetermined ratio, and is supplied to the headphone section of headphone with a microphone. A control means If there is reception of a predetermined radio signal at the time of playback of a record medium, ringing tone will be generated with a ringing-tone generating means, the count of a call of ringing tone will be counted, and it will be characterized by setting a message means as a talk state after the predetermined count call of a call.

[0021] The radio equipment with a record-medium regenerative function of claim 16 is radio equipment with a record-medium regenerative function according to claim 14 or 15, further, it connects possible [an input] to the ringing-tone generating means, and a signal mixing means is characterized by mixing the output of a playback means, and the output of a ringing-tone playback means by the predetermined ratio.

[0022] The radio equipment with a record-medium regenerative function of claim 17 is radio equipment with a record-medium regenerative function according to claim 12, 13, 14, 15, or 16, and is characterized by level adjustment being independently possible for the output of a playback means, and the output of a message means respectively.

[0023] The radio equipment with a record-medium regenerative function of claim 18 They are claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 or radio equipment with a record-medium regenerative function given in 17. A control unit If it will be in a talk state after having the common control unit used for actuation of a playback means and a message means, respectively and receiving a predetermined radio signal by setting change-over actuation at the time of playback of a record medium, a control means will be characterized by setting up a common control unit so that priority may be given to actuation of a message means.

[0024] The radio equipment with a record-medium regenerative function of claim 19 Claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 or radio equipment with a record-medium regenerative function given in 18 Furthermore, if it has a record means to a record medium and reception of a predetermined radio signal is during record by the record means, a control means will not call a possessor but will be characterized by memorizing a purport with reception.

[0025]

[Effect of the Invention] With the radio equipment with a record-medium regenerative function of claim

1, if there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use, while calling a possessor, when playback actuation has a playback means reproduced, it is characterized by making it stop in the condition that it is reproducible from a current record-medium playback location.

[0026] Therefore, if a radio signal is received, in order to stop in the condition that playback can be automatically reproduced from a current record-medium playback location when playback actuation is made, a possessor does not need to perform playback halt actuation himself, and operability is good and he does not do an operation mistake. Furthermore, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly.

[0027] With the radio equipment with a record-medium regenerative function of claim 2, when the possessor was called when there was reception of a predetermined radio signal at the time of playback of the record medium by headphone use, the message initiation actuation by the control unit was made after that and playback actuation has a playback means reproduced, it is characterized by making it stop in the condition that it is reproducible from a current record-medium playback location.

[0028] Therefore, if a radio signal is received and a possessor performs message initiation actuation, in order to stop in the condition that playback can be automatically reproduced from a current record-medium playback location when playback actuation is made, a possessor does not need to perform playback halt actuation himself, and operability is good and he does not do an operation mistake. Furthermore, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly.

[0029] In the radio equipment with a record-medium regenerative function of claims 3, 8, and 14, the call to a possessor is characterized by carrying out in the ringing tone by the ringing-tone generating means.

[0030] Therefore, it can tell a possessor having received intelligibly.

[0031] If there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use, while generating ringing tone with a ringing-tone generating means, when the count of a call of ringing tone is counted and playback actuation has a playback means reproduced after the predetermined count call of a call, in the radio equipment with a record-medium regenerative function of claim 4, it is characterized by to make it stop in the condition that it is reproducible from a current record-medium playback location.

[0032] Therefore, if a radio signal is received, in order to stop in the condition that playback can be automatically reproduced from a current record-medium playback location after the count call of predetermined when playback actuation is made, a possessor does not need to perform playback halt actuation himself, and operability is good and he does not do an operation mistake. Furthermore, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly. Moreover, the predetermined count of a call is kind to a transmitting person, if it is made into an average count until message initiation is carried out from call initiation, and if a possessor enables it to set up, it will become easier to be this kind of migration telephone machine, and to use it for a possessor.

[0033] In the radio equipment with a record-medium regenerative function of claim 5, if set as message exit status, it will be characterized by controlling a playback means to reproduce a record medium.

[0034] Therefore, after only carrying out message termination actuation, or detecting message termination automatically and setting it as exit status oneself, playback can be resumed automatically, and even if a possessor does not do playback actuation, he ends.

[0035] In the radio equipment with a record-medium regenerative function of claim 6 If a signal-processing means is controlled during playback of a record medium using headphone with a microphone to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced, after calling a possessor It is characterized by controlling a signal-processing means

to make it stop, and to set a message means as a talk state, and to supply the output of a message means to the headphone section of headphone with a microphone.

[0036] Therefore, listening and a message according the playback data of a record medium to a radio signal can be performed only by using headphone with a microphone. And since a possessor does not need to perform playback halt actuation himself since it stops in the condition that it is reproducible from a record-medium playback location current when playback actuation is automatically made for playback, even if it received the radio signal during playback of a record medium, and it is set as a talk state still more nearly automatically and it is not necessary to also perform message initiation actuation, operability is good, and an operation mistake is not carried out. Moreover, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly. Furthermore, since it can carry out while these had attached without removing headphone, it is very user-friendly.

[0037] In the radio equipment with a record-medium regenerative function of claim 7 If a signal-processing means is controlled during playback of a record medium using headphone with a microphone to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced if a possessor is called and the message initiation actuation by the control unit is made after that It is made to stop and is characterized by controlling a signal-processing means to supply the output of a message means to the headphone section of headphone with a microphone.

[0038] Therefore, listening and a message according the playback data of a record medium to a radio signal can be performed only by using headphone with a microphone. And even if it receives a radio signal during playback of a record medium, in order to stop, in the condition that playback can be automatically reproduced from a current record-medium playback location only by a possessor performing message initiation actuation when playback actuation is made, a possessor does not need to perform playback halt actuation himself, and operability is good and he does not do an operation mistake. Moreover, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly. Furthermore, since it can carry out while these had attached without removing headphone, it is very user-friendly.

[0039] In the radio equipment with a record-medium regenerative function of claim 9 If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when ringing tone is generated with a ringing-tone generating means, the count of a call of ringing tone is counted and playback actuation has a playback means reproduced after the predetermined count call of a call It is characterized by controlling a signal-processing means to make it stop, and to set a message means as a talk state, and to supply the output of a message means to the headphone section of headphone with a microphone.

[0040] Therefore, listening and a message according the playback data of a record medium to a radio signal can be performed only by using headphone with a microphone. And since a possessor does not need to perform playback halt actuation himself since it stops in the condition that it is reproducible from a record-medium playback location current when playback actuation is automatically made for playback after the count call of predetermined, even if it received the radio signal during playback of a record medium, and it is set as a talk state still more nearly automatically and message initiation actuation does not need to carry out, either, it is good in operability, and an operation mistake is not carried out. Moreover, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly.

Furthermore, since it can carry out while these had attached without removing headphone, it is very user-friendly. And if it is made an average count until message initiation is carried out from call initiation with this kind of migration telephone vessel, it is kind to a transmitting person, and if a possessor enables it to set up the predetermined count of a call, it will become easier to use it for a

possessor.

[0041] In the radio equipment with a record-medium regenerative function of claim 10, further, the signal-processing means is connected possible [an input] to the ringing-tone generating means, and a control means is characterized by controlling a signal-processing means to supply the output of a ringing-tone generating means to the headphone section of headphone with a microphone at the time of ringing-tone generating.

[0042] Therefore, a call can be ensured even if the possessor has attached headphone.

[0043] If set as message exit status, while controlling a playback means by radio equipment with a record-medium regenerative function of claim 11 to reproduce a record medium, it is characterized by controlling a signal-processing means to supply the output of a playback means to the headphone section of headphone with a microphone.

[0044] Therefore, after only carrying out message termination actuation, or detecting message termination automatically and setting it as exit status oneself, playback can be resumed automatically, and playback actuation is unnecessary and very convenient.

[0045] In the radio equipment with a record-medium regenerative function of claim 12, using headphone with a microphone, the output of a playback means and the output of a message means are mixed by the predetermined ratio, and it is characterized by supplying the headphone section of headphone with a microphone.

[0046] Therefore, listening and a message according the playback data of a record medium to a radio signal can be performed only by using headphone with a microphone. And even if it receives a radio signal during playback of a record medium, it can talk over the telephone only by performing message initiation actuation, continuing playback of a record medium. That is, it can talk over the telephone by mixing the regeneration level of a record medium so that it may be set to a low compared with the receiver level in the case of a message, being able to use the playback sound of a record medium as BGM. Furthermore, it is not necessary to remove headphone and is very convenient in this case.

[0047] In the radio equipment with a record-medium regenerative function of claim 13, after calling a possessor if there is reception of a predetermined radio signal at the time of playback of a record medium while mixing the output of a playback means, and the output of a message means by the predetermined ratio and supplying the headphone section of headphone with a microphone using headphone with a microphone, it is characterized by setting a message means as a talk state.

[0048] Therefore, listening and a message according the playback data of a record medium to a radio signal can be performed only by using headphone with a microphone. And it can talk over the telephone, considering as a talk state automatically and continuing playback of a record medium, even if it receives a radio signal during playback of a record medium. That is, it can talk over the telephone by mixing the regeneration level of a record medium so that it may be set to a low compared with the receiver level in the case of a message, being able to use the playback sound of a record medium as BGM. Furthermore, in this case, it is not necessary to remove headphone and to operate it at all, is very convenient, and user-friendly.

[0049] In the radio equipment with a record-medium regenerative function of claim 15, if there is reception of a predetermined radio signal at the time of playback of a record medium while mixing the output of a playback means, and the output of a message means by the predetermined ratio and supplying headphone with a microphone, ringing tone will be generated with a ringing-tone generating means, the count of a call of ringing tone will be counted, and it will be characterized by setting a message means as a talk state after the predetermined count call of a call.

[0050] Therefore, listening and a message according the playback data of a record medium to a radio signal can be performed only by using headphone with a microphone. And it can talk over the telephone, considering as a talk state automatically and continuing playback of a record medium after the count call of predetermined, even if it receives a radio signal during playback of a record medium. That is, it can talk over the telephone by mixing the regeneration level of a record medium so that it may be set to a low compared with the receiver level in the case of a message, being able to use the playback sound of a record medium as BGM. Furthermore, in this case, it is not necessary to remove headphone and to

operate it at all, is very convenient, and user-friendly. And if it is made an average count until message initiation is carried out from call initiation with this kind of migration telephone vessel, it is kind to a transmitting person, and if a possessor enables it to set up the predetermined count of a call, it will become easier to use it for a possessor.

[0051] In the radio equipment with a record-medium regenerative function of claim 16, it is further characterized by mixing the output of a playback means, and the output of a ringing-tone playback means by the predetermined ratio.

[0052] Therefore, a call can be ensured even if the possessor has attached headphone.

[0053] In the radio equipment with a record-medium regenerative function of claim 17, it is characterized by level adjustment being independently possible for the output of a playback means, and the output of a message means respectively.

[0054] Therefore, the regeneration level of a record medium and the receiver level in a message can be adjusted to arbitration, and it is easier to employ a possessor.

[0055] In the radio equipment with a record-medium regenerative function of claim 18, if a control unit will be in a talk state after it has the common control unit used for actuation of a playback means and a message means, respectively and receives a predetermined radio signal by setting change-over actuation at the time of playback of a record medium, it will be characterized by setting up a common control unit so that priority may be given to actuation of a message means.

[0056] Therefore, since priority is given to the message related actuation with much operating frequency in such a case, change-over actuation of a common control unit can be reduced, and it is user-friendly.

[0057] In the radio equipment with a record-medium regenerative function of claim 19, if it has a record means to a record medium and reception of a predetermined radio signal is during record by the record means further, a control means will not call a possessor but will be characterized by memorizing a purport with reception.

[0058] Therefore, even if a radio signal receives recording on a record medium, record is not interrupted and it is very convenient.

[0059]

[Embodiment of the Invention] The block diagram which explains the first operation gestalt of the radio equipment with a record-medium regenerative function of this invention to drawing 1 is hung up.

[0060] In this example, a playback means 102 to reproduce a record medium 101, and a message means 104 to talk by transmitting and receiving a radio signal over the telephone from an antenna 103 are controlled by the control means 105. A control means 105 receives the input of the actuation signal generated in actuation of a control unit 106. The output of the playback means 102 is supplied to headphone 108 through a volume controller 107. That is, with this equipment, the playback data of a record medium 101 are reproduced by headphone 108. The output of the message means 104 is supplied to a loudspeaker 111 through a volume controller 109, and the sound signal from a microphone 111 is inputted into a message means. That is, while restoring to the signal received by wireless with the message means 104 with this equipment and reproducing the acquired receiver signal by the loudspeaker 110, the message by wireless can be performed by modulating the transmission signal which took up with the microphone with the message means 104, and transmitting the obtained radio signal. In addition, the ringing-tone signal from the ringing-tone generating means 112 controlled by the control means 105 is also inputted into a loudspeaker 110.

[0061] The playback means 102 is made into the pocket mold MD (mini disc) player with this operation gestalt. The block diagram of this playback means 102 is hung up over drawing 6.

[0062] It is equipped with MD1 removable and the playback means 102 is equipped with the playback section 2 which performs this playback. The playback section 2 is connected to the RAM controller 4 through the EFM decoder 3 at ready-for-sending ability. It connects with RAM5 currently called common-name shock proof memory mutually, and the RAM controller 4 controls this RAM5. The RAM controller 4 is connected with the ATRAC decoder 6, and the output of this ATRAC decoder 6 is supplied to a volume controller 107 through D/A converter 112 (refer to drawing 1). In addition, the EFM decoder 3 becomes irregular for the playback to MD (eight-to-fourteen modulation), and decodes

an ATRAC decoder to the digitized voice data before compressing the digitized voice data compressed into one fifth.

[0063] In this operation gestalt, ROM22 and RAM23 which were connected with CPU21 and this respectively possible [the read-out possibility of, and read-out/store] correspond to a control means 105. And the playback section 2, the EFM decoder 3, the RAM controller 4, and the ATRAC decoder 6 of a playback means are controlled by the control means 105.

[0064] Moreover, the message means 104 is set to PHS with this operation gestalt. The block diagram of this message means 104 is hung up over drawing 7.

[0065] The message means 104 is equipped with the wireless section 11 and the TDMA circuit 14 for time division multiple access control containing RF which performs transmission and reception with the antenna 103 and antenna 103 which transmit and receive digital radio commo data. The data from the TDMA circuit 14 are transmitted to the wireless section 11 through a modulator 12, and the data from the wireless section 11 are transmitted to the TDMA circuit 14 through a demodulator 13. The TDMA circuit 14 is connected possible [the ADPCM circuit 15 and transmission and reception], and the output signal from the ADPCM circuit 15 is supplied to a volume controller 109 through D/A converter 113 (refer to drawing 1). In addition, the signal from the microphone 111 of drawing 1 is inputted into the ADPCM circuit 15 through A/D converter 114. Here, the ADPCM circuit 15 performs an Adaptive Differential Pulse Code Modulation.

[0066] The hard configuration of this operation gestalt is shown in drawing 2 . While headphone 108 are connected, the PHS section 500 is connected to MD player section which is the playback means 102. This PHS section is equipped with an antenna 103, the message means 104, a control means 105, a control unit 106, volume controllers 107 and 109, a loudspeaker 110, a microphone 111, and ringing-tone generating means 112 grade. That is, this PHS section 500 has the role of a PHS system and the controller of MD player. In addition, for MD player section actuation key in which 51 contain a numerical keypad in among drawing, and 52 contains MD playback / halt key 52a and stop key 52b, and 53, as for MD / PHS exchange key, and 55, message initiation / end key, and 54 are [a display panel and 56] volume control keys.

[0067] Next, each main actuation in the radio equipment with a record-medium regenerative function of this operation gestalt is explained.

[0068] In MD playback, music to the playback of the 1st music currently recorded on MD is started by pushing MD playback / halt key 52a. Moreover, by the MD/PHS exchange key 54, by switching to MD actuation, after inputting the number of the music which corresponds by the numerical keypad 51 and displaying a figure on a display panel 55, it can make by pushing MD playback / halt key 52a to reproduce from predetermined music other than the 1st music. And it can be made to stop or halt by pushing stop key 52b or MD playback / halt key 52a to stop playback of MD. In addition, the volume control key 56 adjusts during MD playback to adjust a regeneration level. Priority is given to MD actuation even if it does not perform switch actuation one by one by the MD/PHS exchange key 54 during MD playback and a halt, although this volume control key 56 is a combination key of MD/PHS in a numerical keypad 51.

[0069] When telephoning with PHS, by the MD/PHS exchange key 54, it switches to PHS actuation, and after inputting the telephone number of arbitration by the numerical keypad 51, it carries out by pushing message initiation / end key 53. Moreover, it is also possible to call the memorized telephone number and to telephone (not shown [an actuation key etc.]).

[0070] When PHS receives a telephone, if a signal is received, when the control means 105 which received transfer of reception from the message means 104 controls the ringing-tone generating means 112, ringing tone will be first emitted from a loudspeaker 110. If a possessor hears this and message initiation / end key 53 is pushed, he will become possible [telephoning to a transmitting partner]. The volume control key 56 adjusts during a message to adjust a receiver loudness level of sound. Priority is given to PHS actuation even if it does not perform switch actuation one by one by the MD/PHS exchange key 54 during a message, although this volume control key 56 is a combination key of MD/PHS in a numerical keypad 51. In addition, what is necessary is just to push message initiation / end

key 53 again at the time of message termination.

[0071] Here, the case where a telephone is received during MD playback which is the description of the radio equipment with a record-medium regenerative function of this first operation gestalt is explained.

[0072] If an antenna 103 receives a radio signal, the message means 104 will transmit this to a control means 105, and will judge whether MD is reproducing a control means 105. In this case, since MD is under playback, a control means 105 controls the playback means 102 to set playback of MD as a halt condition, after controlling the ringing-tone generating means 112 and calling the ringing tone of the count of predetermined by the loudspeaker 110. Then, a possessor's push of message initiation / end key 53 sets the message means 104 as a talk state. There is 1 time of a call sound in the count of predetermined, and he is trying to set playback of MD as a halt immediately with this first operation gestalt. This is to have to have the PHS section 500 of drawing 2 and for message initiation / end key 53 to have to push, after a possessor hears generating of ringing tone and removes headphone 108. That is, after the 1st call, since the possessor will remove headphone immediately, he is for considering the resumption location of MD playback after message termination as a headphone removal time. In addition, although the above-mentioned mode is desirable, even if it is good also as 3 - 5 times and has not become the count of predetermined further in this case about the predetermined count of a call, when message initiation / end key 53 is pushed, playback of MD may be made to be set as a halt.

[0073] By the way, during a message, MD will be in a halt condition, and in an above-mentioned case, although priority will be given over MD actuation, PHS actuation, and both sides to the volume control key 56 which is a combination key by normal operation, when it becomes under a message by such progress, priority is given to PHS actuation. Therefore, what is necessary is just to operate the volume control key 56 to adjust a receiver loudness level of sound, even if it does not set up one by one by the MD/PHS exchange key 54.

[0074] In such radio equipment with a record-medium regenerative function of the first operation gestalt, if a radio signal is received during MD playback, since it is set as a playback halt condition, automatically, a possessor does not need to perform playback halt actuation himself, and operability will be good and he will not do an operation mistake. Furthermore, after message termination, if playback actuation is performed, a record medium can be again reproduced from the condition before message initiation, and it is user-friendly.

[0075] Next, the second operation gestalt of the radio equipment with a record-medium regenerative function of this invention is explained. This block diagram is hung up over drawing 3.

[0076] With the second operation gestalt, although the playback means 102 and the message means 104 are the same as MD player, PHS, and the first operation gestalt respectively, it differs from the first operation gestalt in that the point of using the headphone 208 with a microphone, the control approach by the control means, and signal processing are performed in digital one. Below, the second operation gestalt is explained.

[0077] The output of the playback means 102 is supplied to the signal-processing means 220 through variable attenuator 207 with digital data. Moreover, the output of the message means 104 is also supplied to the signal-processing means 220 through variable attenuator 209. The headphone 208 with a microphone, a loudspeaker 110, and a microphone 111 are connected to the signal-processing means 220. The output from the ringing-tone generating means 212 is also supplied further, and the signal-processing means 220 supplies the output of arbitration to the message means 104.

[0078] The hard configuration of the second operation gestalt is shown in drawing 5. MD player section and the headphone 208 with a microphone which are the playback means 102 are connected to the PHS section 501. This PHS section 501 is equipped with an antenna 103, the message means 104, a control means 105, a control unit 106, variable attenuators 207 and 209, a loudspeaker 110, a microphone 111, the ringing-tone generating means 212, and the signal-processing means 220. That is, this PHS section 501 has the role of a PHS system and the controller of MD player. The actuation side of this PHS section 501 is equipped with MD player section actuation key 52 containing a numerical keypad 51, MD playback / halt key 52a, and stop key 52b, the message initiation / end key 53, the MD/PHS exchange key 54, the display panel 55, and the volume control key 56 as well as the PHS section 500 of the first

operation gestalt. In addition, the microphone and headphone which are called the so-called head set are carried out to headphone with a microphone at one.

[0079] Next, it explains based on the block diagram which hangs up the configuration of the signal-processing means 220 over drawing 4.

[0080] The signal-processing means 220 consists of DSP (digital signal processor)24, D/A converters 25 and 27, and A/D converters 26 and 28. MD playback data from the playback means 102 by which level setting was carried out with variable attenuator 207, the ringing-tone data from the ringing-tone generating means 212, the receiver data from the message means 104 by which level setting was carried out with variable attenuator 209, the data that carried out A/D conversion (A/D converter 26) of the microphone section input of the headphone 208 with a microphone, and the data which carried out A/D conversion (A/D converter 28) of the input of a microphone 111 are inputted into DSP24. This DSP24 is controlled by the control means 205 which consists of CPU21, ROM22, and RAM23. In addition, the control means 105 and the control approach of the first operation gestalt differ from each other, if it is original, it is necessary to change the sign of CPU, ROM, and RAM but, the playback means 102 and the message means 104 of a control means 205 are the same as that also of the first and second operation gestalt, and it has attached the same sign for convenience in order to substitute above-mentioned drawing 7 and explanation of drawing 8 for these explanation.

[0081] Moreover, in DSP24, predetermined signal processing is performed so that it may mention later, and according to a situation, the signal of arbitration is outputted to a loudspeaker 110 and the direct message means 104 through the headphone section of the headphone 208 with a microphone, and D/A converter 27 through D/A converter 25.

[0082] Each main actuation in the radio equipment with a record-medium regenerative function of the second operation gestalt is explained focusing on actuation of this signal-processing means 220. In addition, since it is the same as the first operation gestalt about the concrete operations of each actuation key in a control unit 106, it omits.

[0083] In MD playback, the signal-processing means 220 is controlled by the control means 205, carries out D/A conversion of the MD playback data from the playback means 102, and outputs them to the headphone section of the headphone 208 with a microphone. Thereby, music etc. can hear the recording information of MD in the headphone section. In addition, by operating the volume control key 56 of a control unit 106, variable attenuator 207 is controlled by the control means 205 and this is adjusted to adjust the sound volume of a playback sound.

[0084] The message by PHS is explained. With this operation gestalt, it can talk over the telephone by both the loudspeaker 110 and the microphone 111, and the headphone 208 with a microphone. These selections are performed by whether headphone with a microphone are connected. If the jack of the headphone 208 with a microphone is connected to the PHS section 501, and it considers as the message by this and does not connect in detail, it is set as the message with a loudspeaker 110 and a microphone 111. In addition, although considered as the automatic judging by the existence of a jack, a user may enable it to choose freely with this operation gestalt, for example using a selection key etc.

[0085] First, a message in case the headphone 208 with a microphone are not connected to the PHS section 501 is explained.

[0086] if a predetermined partner will be telephoned and it will be in a talk state by both connection, will take up with a microphone 111, the transmission data and the receiver data from a partner by which A/D conversion was carried out will be supplied to the signal-processing means 220, respectively, and the signal-processing means 220 will be controlled by the control means 205 -- each data -- the message means 104 -- D/A conversion is carried out and a loudspeaker 110 is supplied. By this, it can talk over the telephone using a loudspeaker 110 and a microphone 111.

[0087] If a radio signal is received when receiving a telephone, when the control means 205 which received transfer of reception from the message means 104 controls the ringing-tone generating means 212, ringing-tone data will be supplied to the signal-processing means 220. the signal-processing means 220 -- control of a control means 205 -- D/A conversion of this data is carried out, and a loudspeaker 110 is supplied. Thereby, ringing tone is emitted from a loudspeaker 110. If a possessor hears this and

message initiation / end key 53 is pushed, he will become possible [telephoning to a transmitting partner]. Processing of each data under message is as a publication above. During a message, by operating the volume control key 56 of a control unit 106, variable attenuator 209 is controlled by the control means 205 and this is adjusted to adjust receiver sound volume. In addition, although MD sound-volume actuation and PHS sound-volume actuation used the volume control key 56, this actuation key is the same with the first operation gestalt, and it is the combination key of MD/PHS, and when each is operating independently, priority is given to actuation of a working means even if the MD/PHS exchange key 54 does not perform switch actuation one by one.

[0088] Next, the message by the headphone 208 with a microphone is explained. When the headphone 208 with a microphone are connected, a control means 205 makes an invalid the signal line of a loudspeaker 110 and a microphone 111.

[0089] if a predetermined partner will be telephoned and it will be in a talk state by both connection, will take up in the microphone section of the headphone 208 with a microphone, the transmission data and the receiver data from a partner by which A/D conversion was carried out will be supplied to the signal-processing means 220, respectively, and the signal-processing means 220 will be controlled by the control means 205 -- each data -- the message means 104 -- D/A conversion is carried out and the headphone section of the headphone 208 with a microphone is supplied. By this, it can talk over the telephone using the headphone 208 with a microphone.

[0090] If a radio signal is received when receiving a telephone, when the control means 205 which received transfer of reception from the message means 104 controls the ringing-tone generating means 212, ringing-tone data will be supplied to the signal-processing means 220. the signal-processing means 220 -- control of a control means 205 -- D/A conversion of this data is carried out, and the headphone section of the headphone 208 with a microphone is supplied. Thereby, ringing tone is emitted from the headphone section. If a possessor hears this and message initiation / end key 53 is pushed, he will become possible [telephoning to a transmitting partner]. Processing of each data under message is as a publication above. In addition, the receiver volume control under message is the same as a message with a previous loudspeaker 110 and a previous microphone 111.

[0091] By the way, when making a surrounding man make it turn out that there was reception, you may make it ringing tone to be emitted only from the headphone section with this operation gestalt in the message by the headphone 208 with a microphone, but reproduce only ringing tone also from a loudspeaker 110. What is necessary is just to control the signal-processing means 220 so that a control means 205 confirms the signal line to a loudspeaker 110 only during ringing-tone generating and this is supplied to this.

[0092] Here, the case where a telephone is received during MD playback which is the description of the radio equipment with a record-medium regenerative function of this second operation gestalt is explained. Needless to say, the headphone 208 with a microphone are used during MD playback.

[0093] If an antenna 103 receives a radio signal, the message means 104 will transmit this to a control means 205, and will judge whether MD is reproducing a control means 205. In this case, since MD is under playback, the ringing-tone generating means 212 is controlled, and a control means 205 supplies ringing tone to the signal-processing means 220, it mixes MD playback data and ringing-tone data, and controls the signal-processing means 220 to make it output to the headphone section. After the count of predetermined calls ringing tone in the headphone section, the playback means 102 is controlled to set playback of MD as a halt condition, and the message means 104 is set as a talk state after that. That is, automatically, playback of MD will be in a halt condition and will be in a talk state still more nearly automatically. It is because it will be thought that the user has carried the microphone 208 with headphone if it is [MD] under playback to make it a talk state automatically here. In addition, fixed time amount immediately after also considering having left this equipment and being in a talk state with this operation gestalt, while the user had performed MD playback accidentally (for example, for dozens of seconds.) With this operation gestalt, it is set as 10 seconds. Inside, if there is no input more than the predetermined level from the microphone section, the control means 205 is set up so that a talk state may be cut automatically.

[0094] There is 3 times of call sounds in the count of predetermined, and he is trying to set playback of MD as a halt immediately with this second operation gestalt. A possessor and a transmitting person have allowances, and this considers them in time so that a message may be possible. In addition, the predetermined count of a call may have a these people's experiment top and 3 - 5 desirable times, and you may be about 1 - 9 times. Although the 3 above-mentioned times of the counts of predetermined are set up as initial setting, with this operation gestalt, a user can also set them up himself. This is set up by actuation of numerical-keypad 51 grade.

[0095] Moreover, with this operation gestalt, even if message initiation / end key 53 is pushed before the call of the count of predetermined, it changes playback of MD into a halt condition, and it is set up so that it may be in a talk state further.

[0096] if set as a talk state, will take up in the microphone section, the transmission data and the receiver data from a partner by which A/D conversion was carried out will be supplied to the signal-processing means 220, respectively, and the signal-processing means 220 will be controlled by the control means 205 -- each data -- the message means 104 -- D/A conversion is carried out and the headphone section is supplied. By this, it can talk over the telephone using the headphone 208 with a microphone.

[0097] By the way, that what is necessary is just to operate the volume control key 56 of a control unit 106, variable attenuator 209 is controlled by the control means 205 and, thereby, this is adjusted to adjust receiver sound volume during a message. In this case, while being in a talk state, since MD is in a halt condition, both functions will operate, but as for actuation of the volume control key 56, priority is given to PHS actuation if it becomes under a message by such progress. Therefore, the volume can be controlled even if it does not set up one by one by the MD/PHS exchange key 54.

[0098] And if a message is completed, message initiation / end key 53 is pushed and a talk state is canceled, a control means 205 will control the signal-processing means 220, will carry out D/A conversion of the MD playback data from the playback means 102, and will output them to the headphone section while controlling the playback means 102 and resuming playback of MD. That is, MD playback resumes automatically. Thereby, return and a user can ask the recording information of MD again to the condition before a message for music etc. In addition, what is necessary is just to only operate the volume control key 56 to adjust the sound volume of a playback sound, since the talk state is completed. Moreover, when message initiation / end key 53 was pushed, although [this operation gestalt] playback is resumed, the signal of the line disconnection (message discharge of the other party) from a radio station is recognized, and you may make it resume automatically. It can automate altogether without performing all actuation, if it does in this way.

[0099] Thus, in the radio equipment with a record-medium regenerative function of this operation gestalt, if a radio signal is received during MD playback, since it can talk over the telephone in the condition as it is automatically by it being set as a playback halt condition and a talk state, and using headphone with a microphone, an operation mistake is not excelled and carried out very much to operability. Furthermore, after message termination actuation, in order to resume playback of MD automatically, playback halt, message, and resumption of playback can be performed, and it is very user-friendly without troublesome actuation.

[0100] Furthermore, the third operation gestalt of the radio equipment with a record-medium regenerative function of this invention is explained. This block diagram is hung up over drawing 6.

[0101] The configuration of the third operation gestalt only changed the signal-processing means 220 to the signal mixing means 320, and other configurations are the same as the second operation gestalt. Therefore, the explanation of those other than signal mixing means 320 is omitted. In addition, the sign of a control means is set to 305.

[0102] By control of a control means 305, the signal mixing means 320 is mixed with a predetermined mixing ratio, and outputs MD playback data from the playback means 102 by which level setting was carried out with variable attenuator 207, and the ringing-tone data from the ringing-tone generating means 212 and the receiver data from the message means 104 by which level setting was carried out with variable attenuator 209. The signal mixing means 320 consists of a DSP, a D/A converter, and an A/D converter as well as the signal-processing means 220 of the second gestalt. To DSP MD playback

data from the playback means 102 by which level setting was carried out with variable attenuator 207, The ringing-tone data from the ringing-tone generating means 212, the receiver data from the message means 104 by which level setting was carried out with variable attenuator 209, the data that carried out A/D conversion of the microphone section input of the headphone 208 with a microphone, and the data which carried out A/D conversion of the input of a microphone 111 are inputted. In addition, a control means 305 consists of a CPU, a ROM, and RAM as well as the second operation gestalt for a start. Moreover, the output of DSP can be supplied to the headphone section of the headphone 208 with a microphone, a loudspeaker 110, and the message means 104.

[0103] The signal mixing means 320 mixes MD playback data from the playback means 102, and the ringing-tone data from the ringing-tone generating means 212 or the receiver data from the message means 104 with a predetermined mixing ratio, only when there are directions from a control means 305. Only the case where receive a telephone during MD playback or MD is reproduced during a message gives directions of mixing of a control means 305. Except it, mixed processing is not performed but the same processing as the signal-processing means 220 of the second operation gestalt is made into the signal mixing means 320. Therefore, explanation is omitted about a part for a common right hand side.

[0104] The case where a telephone is received during MD playback which is the description of the radio equipment with a record-medium regenerative function of this third operation gestalt is explained.

Needless to say, the headphone 208 with a microphone are used during MD playback.

[0105] If an antenna 103 receives a radio signal, the message means 104 will transmit this to a control means 305, and will judge whether MD is reproducing a control means 305. In this case, since MD is under playback, a control means 305 controls the ringing-tone generating means 212, and calls the ringing tone of the count of predetermined in the headphone section. Under the present circumstances, by control of a control means 305, the signal mixing means 320 mixes MD playback data and ringing-tone data with the mixing ratio of 1:1, and is outputting them to the headphone section. After the count call of predetermined, a control means 305 controls the signal mixing means 320 to mix MD playback data from the playback means 102, and the receiver data from the message means 104 with a predetermined mixing ratio, and to output to the headphone section while setting the message means 104 as a talk state. Here, this mixing ratio is set to one third in MD playback data to the level 1 of receiver data. That is, a message will be made into Maine and it will be outputted from the headphone section by making MD playback sound into BGM extent. In addition, it cannot be overemphasized that the transmission data which took up in the microphone section are supplied to the message means 104 by the signal mixing means 320.

[0106] By the way, with this operation gestalt, a control means 207 can adjust MD playback sound volume and receiver sound volume by adjusting variable attenuators 207 and 209 during the above-mentioned message, respectively. Although actuation of the volume control key 56 of a control unit 106 performs adjustment, since it is the combination key of MD actuation and PHS actuation, the volume control key 56 needs to switch a setup by MD / PHS exchange key 54, respectively, and it is necessary to operate it. With this operation gestalt, during a message, since it constitutes so that priority may be given to a message, unless a setup is changed by the MD/PHS exchange key 54, priority is given to PHS actuation.

[0107] And if a message is completed, message initiation / end key 53 is pushed and a talk state is canceled, a control means 305 will recognize message termination. Then, actuation of equipment serves as only MD playback and returns to the usual playback condition. Moreover, even if message initiation / end key 53 is not pushed, since the control means 305 recognizes the signal of the line disconnection (message discharge of the other party) from a radio station, it is satisfactory.

[0108] In addition, with this operation gestalt, if MD playback is started during a message, playback under same message as the above can already be performed. Since the art is the same, explanation is omitted.

[0109] Thus, in the radio equipment with a record-medium regenerative function of the third operation gestalt, it can talk over the telephone, considering as a talk state automatically and continuing playback of a record medium after the count call of predetermined, even if it receives a radio signal during

playback of a record medium. That is, it can talk over the telephone by mixing the regeneration level of a record medium so that it may be set to a low compared with the receiver level in the case of a message, being able to use the playback sound of a record medium as BGM. And since there is nothing and it can perform that these operate it in any way, it is very user-friendly.

[0110] As mentioned above, although explained in full detail based on the typical operation gestalt of the radio equipment with a record-medium regenerative function of this invention, it is not limited to the above-mentioned operation gestalt.

[0111] That is, although the record medium which a playback means reproduces was set to MD with this operation gestalt, record media may be disk-like media, such as tape-like media, such as a cassette tape and DAT, and CD, DVD, and radio equipment may also be mobile phone equipment of not only PHS but others, such as a cellular phone.

[0112] Moreover, with this operation gestalt, although ringing tone performed the call of a possessor, it may be a call which vibrates equipment, for example.

[0113] Furthermore, for a start, in the second operation gestalt, although MD under message was made into the halt condition If it is a tape-like medium that what is necessary is to just be stopped in the condition that it is reproducible from a current record-medium playback location when playback actuation is made It is also good to make it stop, and if it has the so-called last position memory which begins from the playback location before the playback after a halt stopping even if it is a disk-like medium, it is also good to make it stop.

[0114] Moreover, in the second and third operation gestalt, although signal processing and mixed processing were performed by digital processing, these may be analog processings.

[0115] Furthermore, with each operation gestalt of this invention, although it had only the playback means to the record medium, you may have the record means. In addition, when it has a record means and reception of a radio signal is during record by the record means, as for a control means, it is desirable to memorize the purport which did not call a possessor but had reception.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] By transmitting and receiving the playback means and radio signal which reproduce a record medium A message means by which the message with the partner of arbitration can be performed, a playback means, the control means that controls a message means, It is radio equipment with a preparation ***** regenerative function, and a playback means enables playback by headphone. A control means Radio equipment with a record-medium regenerative function characterized by making it stop in the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced while calling a possessor, if there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use.

[Claim 2] By transmitting and receiving the playback means and radio signal which reproduce a record medium A message means by which the message with the partner of arbitration can be performed, a playback means, the control means that controls a message means, It is radio equipment with a preparation ***** regenerative function, and a playback means enables playback by headphone. A control means If there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use Radio equipment with a record-medium regenerative function characterized by making it stop in the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced if a possessor is called and the message initiation actuation by the control unit is made after that.

[Claim 3] It is radio equipment with a record-medium regenerative function according to claim 1 or 2, and the call to a possessor is characterized by carrying out in the ringing tone by the ringing-tone generating means.

[Claim 4] By transmitting and receiving the playback means and radio signal which reproduce a record medium A message means by which the message with the partner of arbitration can be performed, a playback means, the control means that controls a message means, It is radio equipment with a preparation ***** regenerative function, and a playback means enables playback by headphone. A control means If there is reception of a predetermined radio signal at the time of playback of the record medium by headphone use, while generating ringing tone with a ringing-tone generating means Radio equipment with a record-medium regenerative function characterized by making it stop in the condition that it can reproduce from a current record-medium playback location when the count of a call of ringing tone is counted and playback actuation has a playback means reproduced after the predetermined count call of a call.

[Claim 5] It is radio equipment with a record-medium regenerative function according to claim 1, 2, 3, or 4, and if a control means is set as message exit status, it will be characterized by controlling a playback means to reproduce a record medium.

[Claim 6] While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal-processing means connected possible [I/O] to a

message means, and a signal-processing means, a playback means, a message means, and a signal-processing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced, after calling a possessor Radio equipment with a record-medium regenerative function characterized by controlling a signal-processing means to make it stop, and to set a message means as a talk state, and to supply the output of a message means to the headphone section of headphone with a microphone.

[Claim 7] While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal-processing means connected possible [I/O] to a message means, and a signal-processing means, a playback means, a message means, and a signal-processing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when playback actuation has a playback means reproduced if a possessor is called and the message initiation actuation by the control unit is made after that Radio equipment with a record-medium regenerative function characterized by controlling a signal-processing means to make it stop and to supply the output of a message means to the headphone section of headphone with a microphone.

[Claim 8] It is radio equipment with a record-medium regenerative function according to claim 6 or 7, and the call to a possessor is characterized by carrying out in the ringing tone by the ringing-tone generating means.

[Claim 9] While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal-processing means connected possible [I/O] to a message means, and a signal-processing means, a playback means, a message means, and a signal-processing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means If a signal-processing means is controlled during playback of a record medium to supply the output of a playback means to the headphone section of headphone with a microphone and there is reception of a predetermined radio signal at the time of this playback In the condition that it can reproduce from a current record-medium playback location when ringing tone is generated with a ringing-tone generating means, the count of a call of ringing tone is counted and playback actuation has a playback means reproduced after the predetermined count call of a call Radio equipment with a record-medium regenerative function characterized by controlling a signal-processing means to make it stop, and to set a message means as a talk state, and to supply the output of a message means to the headphone section of headphone with a microphone.

[Claim 10] It is radio equipment with a record-medium regenerative function according to claim 8 or 9, and further, the signal-processing means is connected possible [an input] to the ringing-tone generating means, and a control means is characterized by controlling a signal-processing means to supply the output of a ringing-tone generating means to the headphone section of headphone with a microphone at the time of ringing-tone generating.

[Claim 11] It is radio equipment with a record-medium regenerative function according to claim 6, 7, 8,

9, or 10, and it is characterized by controlling a signal-processing means to supply the output of a playback means to the headphone section of headphone with a microphone while it will control a playback means to reproduce a record medium, if a control means is set as message exit status.

[Claim 12] While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal mixing means connected possible [I/O] to a message means, and a signal mixing means, a playback means, a message means, and a signal mixing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A control means When there is reception of a predetermined radio signal, it is the radio equipment with a record-medium regenerative function characterized by being what a possessor is called, and a signal mixing means mixes the output of a playback means, and the output of a message means by the predetermined ratio, and supplied to the headphone section of headphone with a microphone.

[Claim 13] While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal mixing means connected possible [I/O] to a message means, and a signal mixing means, a playback means, a message means, and a signal mixing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A signal mixing means It is what mixes the output of a playback means, and the output of a message means by the predetermined ratio, and is supplied to the headphone section of headphone with a microphone. A control means Radio equipment with a record-medium regenerative function characterized by setting a message means as a talk state after calling a possessor, if there is reception of a predetermined radio signal at the time of playback of a record medium.

[Claim 14] It is radio equipment with a record-medium regenerative function according to claim 12 or 13, and the call to a possessor is characterized by carrying out in the ringing tone by the ringing-tone generating means.

[Claim 15] While connecting possible [an input] to the message means and the playback means which the message with the partner of arbitration can be performed by transmitting and receiving the playback means and radio signal which reproduce a record medium It has the control means which controls the headphone with a microphone connected to the signal mixing means connected possible [I/O] to a message means, and a signal mixing means, a playback means, a message means, and a signal mixing means. By headphone with a microphone It is the radio equipment with a record-medium regenerative function which can hear the playback data based on a playback means, and can also perform the message by the message means. A signal mixing means It is what mixes the output of a playback means, and the output of a message means by the predetermined ratio, and is supplied to the headphone section of headphone with a microphone. A control means Radio equipment with a record-medium regenerative function characterized by generating ringing tone with a ringing-tone generating means, counting the count of a call of ringing tone, and setting a message means as a talk state after the predetermined count call of a call if there is reception of a predetermined radio signal at the time of playback of a record medium.

[Claim 16] It is radio equipment with a record-medium regenerative function according to claim 14 or 15, and further, it connects possible [an input] to the ringing-tone generating means, and a signal mixing means is characterized by mixing the output of a playback means, and the output of a ringing-tone playback means by the predetermined ratio.

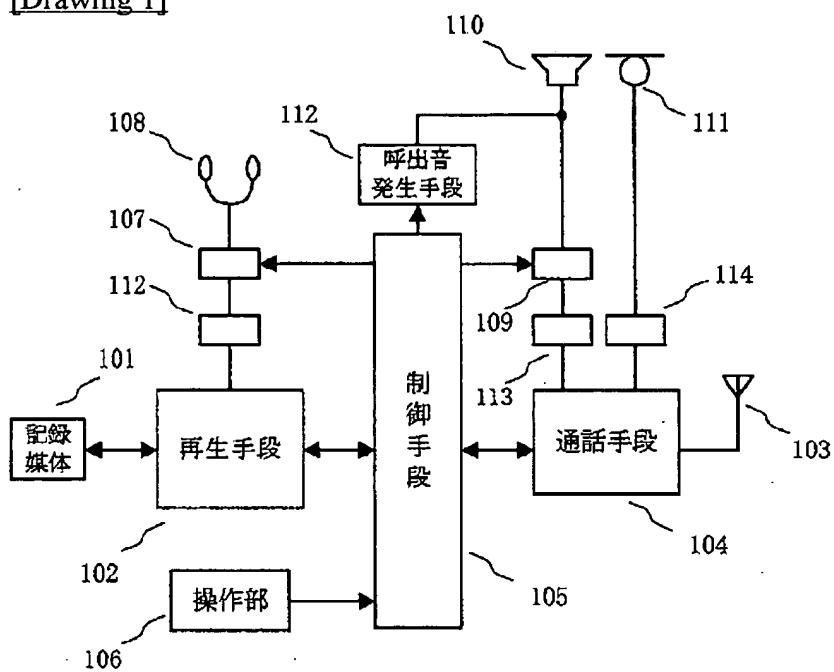
[Claim 17] It is radio equipment with a record-medium regenerative function according to claim 12, 13, 14, 15, or 16, and is characterized by level adjustment being independently possible for the output of a playback means, and the output of a message means respectively.

[Claim 18] They are claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 or radio equipment with a record-medium regenerative function given in 17. A control unit If it will be in a talk state after having the common control unit used for actuation of a playback means and a message means, respectively and receiving a predetermined radio signal by setting change-over actuation at the time of playback of a record medium, a control means will be characterized by setting up a common control unit so that priority may be given to actuation of a message means.

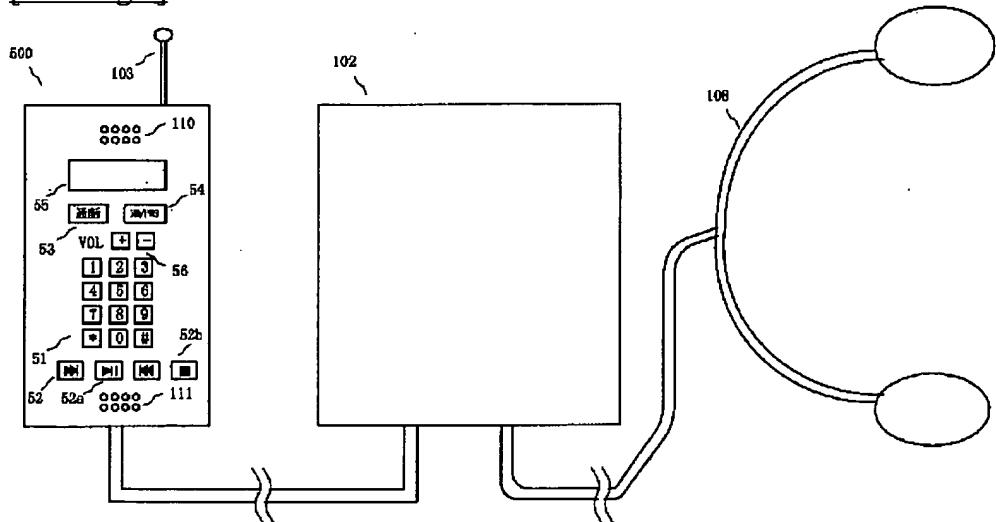
[Claim 19] If claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 or radio equipment with a record-medium regenerative function given in 18 is further equipped with the record means to a record medium and reception of a predetermined radio signal is during record by the record means, a control means will not call a possessor but will be characterized by memorizing a purport with reception.

DRAWINGS

[Drawing 1]



[Drawing 2]

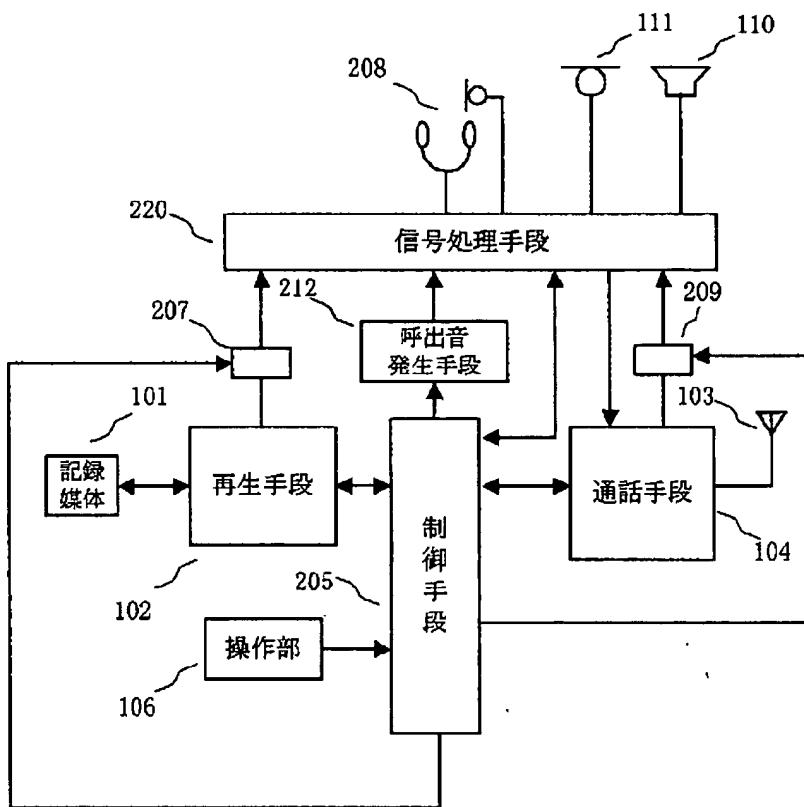


[Drawing 3]

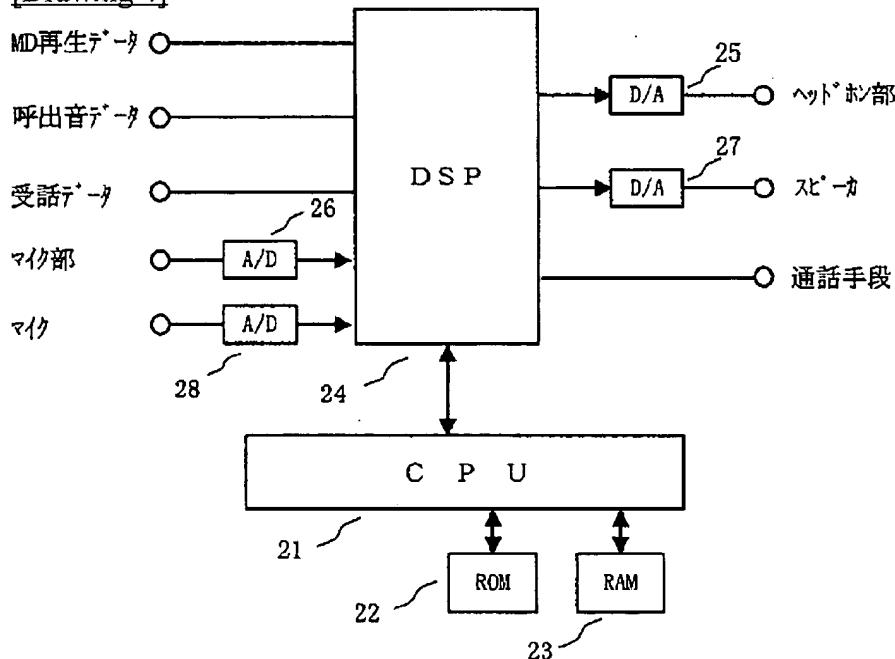
h

g cg b

eb cg e e



[Drawing 4]



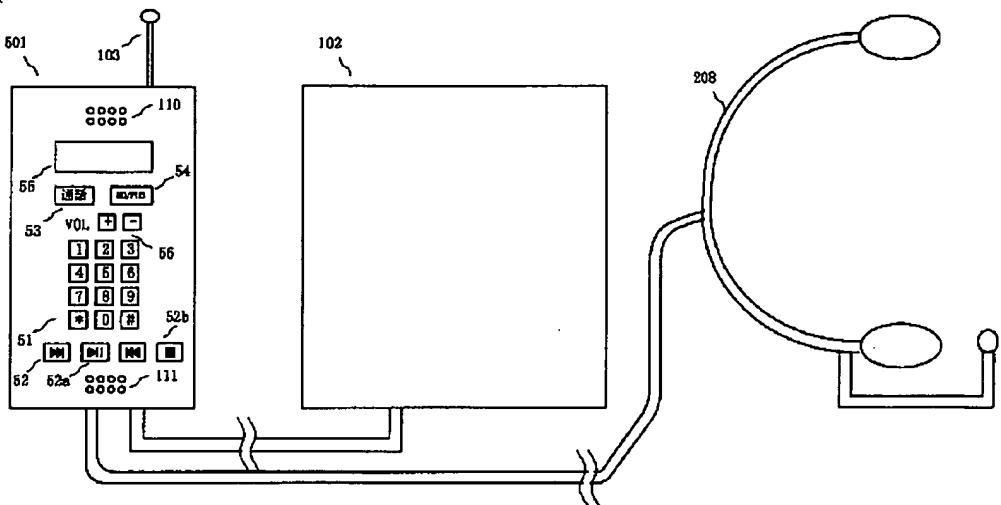
[Drawing 5]

h

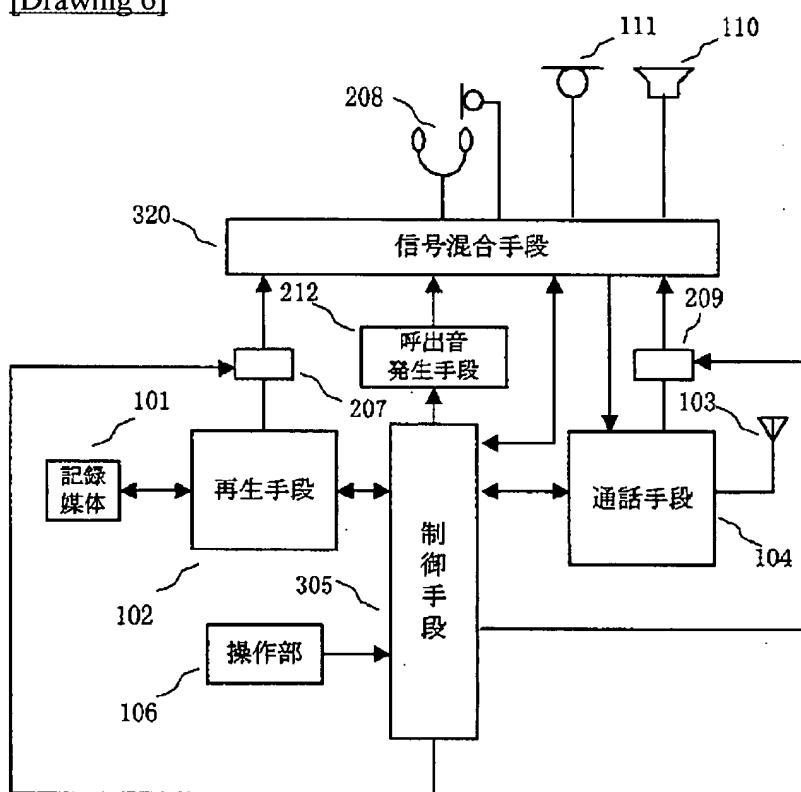
g

cg b

eb cg e e



[Drawing 6]

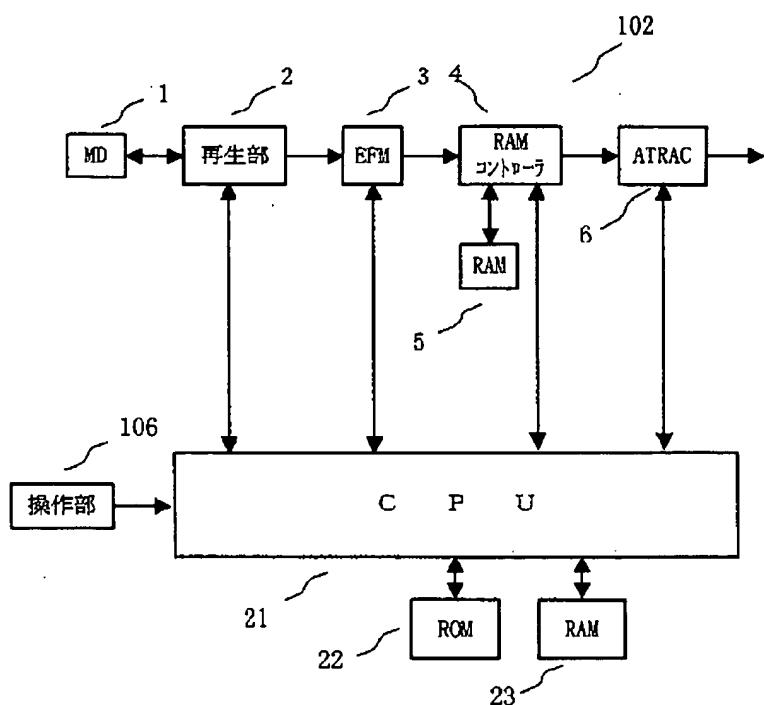


[Drawing 7]

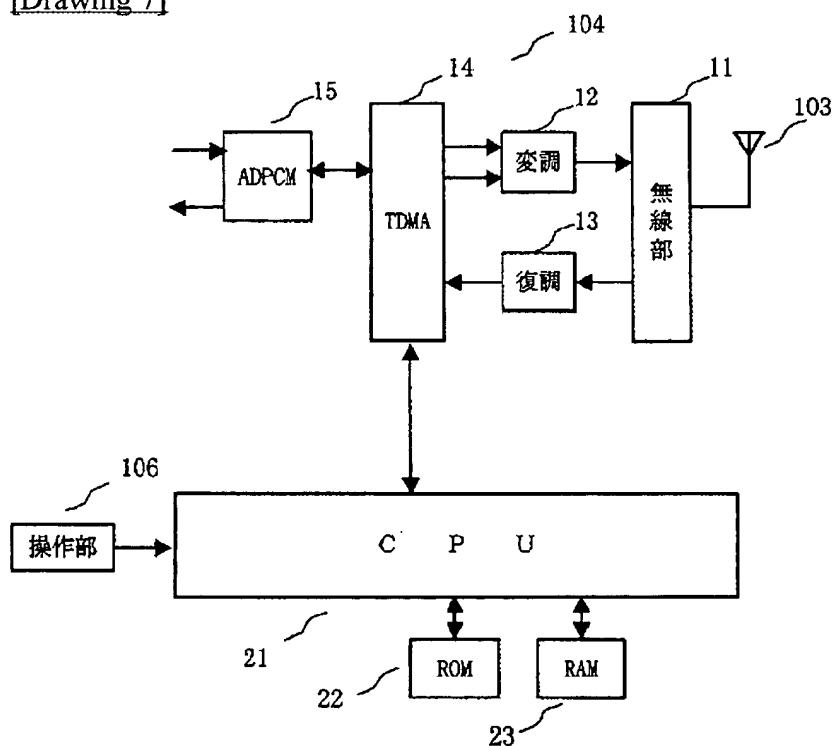
h

g cg b

eb cg e e



[Drawing 7]



[Translation done.]

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- BLACK BORDERS**
- IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- FADED TEXT OR DRAWING**
- BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- SKEWED/SLANTED IMAGES**
- COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- GRAY SCALE DOCUMENTS**
- LINES OR MARKS ON ORIGINAL DOCUMENT**
- REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.